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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO.          |
|---|-------------|----------------------|---------------------|---------------------------|
| 10/674,728  | 09/30/2003  | Juha Hakkinen        | KOLS.059PA          | 3970                      |
| 7590  | 02/24/2006  |                      |                     | EXAMINER<br>HAROON, ADEEL |
| Hollingsworth & Funk, LLC<br>Suite 125<br>8009 34th Avenue South<br>Minneapolis, MN 55425 |             |                      | ART UNIT<br>2685    | PAPER NUMBER              |

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |
|------------------------------|------------------------|---------------------|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|                              | 10/674,728             | HAKKINEN ET AL.     |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |
|                              | Adeel Haroon           | 2685                |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-28 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date: ____ .   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: ____ .                                   |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4-8, 10, 11, and 15-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Pekkarinen et al. (U.S. 6,321,071).

With respect to claim 1, Pekkarinen et al. disclose a method of testing a RF circuit device of a telecommunications system (Column 1, lines 6-11). Pekkarinen et al. teach providing the RF circuit, the transmitter, to be tested with an input test signal, thus generating an RF output test signal characterizing the response of the RF circuit (Column 4, lines 11-23). Pekkarinen et al. also disclose down-converting the RF output test signal using element number 22, which is integrated into the RF circuit (Column 4, lines 26-36 and Column 4, lines 5-7).

With respect to claim 4, Pekkarinen et al. further disclose mixing the RF output test signal with a pre-defined reference frequency from element number 12, thus generating an IF output test signal (Column 4, lines 26-36). Since this signal is a

baseband signal before entering filter 29 (Column 5, lines 18-20), the IF output test signal must be converted BB output test signal in an analog format.

With respect to claim 5, Pekkarinen et al. teach using a Digital Signal Processor, element number 26, to process the BB output test signal; therefore, the analog BB signal must be AD converted into a digital format in order to be processed by the DSP (Column 4, lines 32-34).

With respect to claim 6, Pekkarinen et al. teach generating a BB input test signal, from element number 6, and up-converting the BB input test with element number 4 into a radio frequency (Column 4, lines 11-23).

With respect to claims 7 and 8, the elements 6 and 22 are interpreted as being in an Analog Boundary Module (Column 4, lines 11-23).

With respect to claim 10, Pekkarinen et al. disclose a test control circuitry, element number 8 (Column 4, lines 11-23).

With respect to claim 11, Pekkarinen et al. teach determining the response of the RF circuit to the RF input test signal by using the BB output test signal with element number 26 (Column 4, lines 32-34).

With respect to claim 15, Pekkarinen et al. disclose an arrangement for testing a RF circuit device of a telecommunications system (Column 1, lines 6-11). Pekkarinen et al. teach providing the RF circuit, the transmitter, to be tested with an input test signal, thus generating an RF output test signal characterizing the response of the RF circuit (Column 4, lines 11-23). Pekkarinen et al. also disclose down-converting

the RF output test signal using element number 22, which is integrated into the RF circuit (Column 4, lines 26-36 and Column 4, lines 5-7).

With respect to claim 16, Pekkarinen et al. disclose a first accessing means with element numbers 8 and 28 connected to the down-converting means with element number 12 to probe the RF output test signal (Column 4, lines 59-67).

With respect to claim 17, Pekkarinen et al. disclose a second accessing means with element numbers 8 and 28 connected to the providing means to provide the input test signal for the RF circuit (Column 4, lines 6-23).

With respect to claim 18, Pekkarinen et al. further disclose mixing the RF output test signal with a pre-defined reference frequency from element number 12, thus generating an IF output test signal (Column 4, lines 26-36). Since this signal is a baseband signal before entering filter 29 (Column 5, lines 18-20), the IF output test signal must be converted BB output test signal in an analog format.

With respect to claim 19, Pekkarinen et al. teach using a Digital Signal Processor, element number 26, to process the BB output test signal; therefore, the analog BB signal must be AD converted into a digital format in order to be processed by the DSP (Column 4, lines 32-34).

With respect to claim 20, Pekkarinen et al. teach generating a BB input test signal, from element number 6, and up-converting the BB input test with element number 4 into a radio frequency (Column 4, lines 11-23).

With respect to claims 21 and 22, the elements 6 and 22 are interpreted as being in an Analog Boundary Module (Column 4, lines 11-23).

With respect to claims 23 and 24, Pekkarinen et al. disclose a test control circuitry, element number 8 (Column 4, lines 11-23).

With respect to claim 25, Pekkarinen et al. teach determining the response of the RF circuit to the RF input test signal by using the BB output test signal with element number 26 (Column 4, lines 32-34).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3, 9, 12, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pekkarinen et al.

With respect to claims 2, 3, and 9, the method of Pekkarinen et al. is described above in the discussion of claim 1. Pekkarinen et al. do not specifically teach using standardized boundary scan test structure. However, a standardized boundary scan test structure is well known in the art as admitted by the applicant in the paragraph 34 of the Specification. Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to use a standardized boundary scan test structure in

the method of Pekkarinen et al. to control the input and output test signals for better control of the testing system.

With respect to claim 12, the method of Pekkarinen et al. is described above in the discussion of claims 1 and 11. Pekkarinen et al. teach using this method as a diagnostic test of the wireless communication device (Column 1, lines 40-51), but do not expressly teach communicating the test result to a production line producing the wireless device. However, it would be obvious to one of ordinary skill in the art to communicate the test results to a production line in order to inform the production line of the problems ascertained from the test results.

With respect to claim 26, the arrangement of Pekkarinen et al. is described above in the discussion of claims 15 and 25. Pekkarinen et al. teach using this arrangement as a diagnostic test of the wireless communication device (Column 1, lines 40-51), but do not expressly teach communicating the test result to a production line producing the wireless device. However, it would be obvious to one of ordinary skill in the art to communicate the test results to a production line in order to inform the production line of the problems ascertained from the test results.

5. Claims 13, 14, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pekkarinen et al. in view of Liu et al. (U.S. 2004/0203467).

With respect to claims 13 and 14, the method of Pekkarinen et al. is described above in the discussion of claim 1. Pekkarinen et al. does not disclose testing the

digital circuit and BB analog circuit. However, Liu et al. disclose method of testing portable communication devices thus making it analogous art since it is in the same field of endeavor. Liu et al. teach testing different parts of the wireless device including digital circuit and analog circuits, elements 101-104 (Paragraph 19). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to test the digital circuits and analog circuits as taught by Liu et al. as part of the method of Pekkarinen et al. in order to have a more complete and thorough testing of the wireless communication device.

With respect to claims 27 and 28, the arrangement of Pekkarinen et al. is described above in the discussion of claim 15. Pekkarinen et al. does not disclose testing the digital circuit and BB analog circuit. However, Liu et al. disclose an arrangement for testing portable communication devices thus making it analogous art since it is in the same field of endeavor. Liu et al. teach testing different parts of the wireless device including digital circuit and analog circuits, elements 101-104 (Paragraph 19). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to test the digital circuits and analog circuits as taught by Liu et al. as part of the arrangement of Pekkarinen et al. in order to have a more complete and thorough testing of the wireless communication device.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Johnson (U.S. 6,839,544) discloses a system and method of

testing RF circuits by downconverting the signal in a test structure integrated in the device. Henriksson (U.S. 6,940,263) discloses a method of testing a transceiver.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adeel Haroon whose telephone number is (571) 272-7405. The examiner can normally be reached on Monday thru Friday, 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Nguyen Vo*  
2-15-2006

AH  
2/9/06

**NGUYEN T. VO**  
**PRIMARY EXAMINER**